

Bank Soil and Sediment Confirmation Sampling Recommendations

1. Decision units should be approximately 30 feet wide by 75 feet long in general. In locations where the removal action varies in width, the decision unit will remain approximately 75 feet in length, while its width will coincide with the actual borders of the removal area.
2. Prior to implementation of the confirmation sampling program, a qualitative inspection (walk-through) will be conducted by agency oversight personnel to confirm that the removal did not expose any obviously suspect material that should be removed or sampled.
 - 2.1. Suspect material would include grey paper residual, grey clay and other soil and any other sediment characteristics commonly associated with PCB residuals.
 - 2.2. Residual deposits of suspect material with aggregate area exceeding greater 400 square feet would typically be targeted for removal or perhaps biased sampling to determine the need for removal. (This would be considered a separate sampling event whose results would not be combined with those from #3 below.)
3. After the qualitative walk-through, Six sampling locations will be identified based on an unaligned grid sampling design.
 - 3.1. Within each grid cell a single sampling location will be located at random using a random number generator.
4. One disadvantage of compositing is the lack of knowledge of the variability within a composite. This variability is a useful value when determining the probability that an individual composite exceeds a threshold value, e.g., 5 ppm. We propose that 5-10% of all composites collected have their respective sub-samples analyzed separately. These sub-sample values will be used to estimate the variability expected from composites and will be used to estimate the probability that any given composite exceeds a threshold such as 5 ppm. We propose that this be done for each section of the river requiring removal action. In this way, the variability will be specific to a portion of the river instead of assuming that one portion of the river will have the same variability as another portion of the river.



5. Soil or sediment samples will be collected from the top 6 inches from each of the identified sampling locations.
6. The 6 Samples will be composited and sub-sampled for laboratory analysis.
7. The resulting value will be compared with the remedial goal (tentatively 5 ppm total PCB) to determine the need for subsequent remedial action.

In-stream Sediment Confirmation Sampling Recommendations

1. Procedures similar to those described for bank soils will also be utilized for instream sediments (i.e., top 6 inches or whatever is available) with the exception that decision units will be configured to match the geometry of sediment removal areas. The sediment core should be pushed to refusal and the complete length of the sediment core recorded. (This value can be used as a measure of remaining soft sediment.)
2. The size of decision units and sample density will be similar to that used for bank decision units (1 sample per 375 square feet). For example a 20-foot grid spacing would result in one sample per 400 square feet.

Remedial Design Recommendations

1. The agencies expect that failure to properly locate the excavation elevations will result in the need to re-work potentially leading to both cost overruns and schedule delays. These factors adversely impact both the agencies and KRSR.
2. Based on data analysis conducted by the agencies, we believe that the current design elevations proposed design elevations are based on a 5ppm concentration "cut line" that will very likely result in average residual total PCB concentrations of approximately 8ppm.
3. This indicates that significant re-work would be necessary given the current design elevations.
4. We believe design elevations should target the 1ppm interface, rather than the 5 ppm interface, or should be set approximately 3 to 6 inches deeper than currently planned.